

SEQUENCE LISTING

<110> Kloting, et al.  
 <120> Use of the Multifunctional Transcription Factor Yin Yang 1 and  
 Variants Thereof for Treating Illnesses, Especially Type I  
 Diabetes  
 <130> 30572/41384  
 <150> PCT/EP03/014762  
 <151> 2003-12-19  
 <150> DE 102 61 650.7  
 <151> 2002-12-20  
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                   Met Ala Ser Gly Asp Thr Leu Tyr Ile Ala Thr Asp Gly  
                   1                  5                  10  
 tcg gag atg cca gcc gag atc gtg gaa ctg cat gag att gag gtg gag 159  
 Ser Glu Met Pro Ala Glu Ile Val Glu Leu His Glu Ile Glu Val Glu  
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acc atc ccg gtg gag act atc gag acc acg gtg gtg ggc gag gag gag	30	35	40	45	207
Thr Ile Pro Val Glu Thr Ile Glu Thr Thr Val Val Gly Glu Glu Glu					
gac gac gac gaa gac gac gag gat ggt ggc ggc gga gac cac gac ggt ggc	50	55	60		255
Asp Asp Asp Glu Asp Asp Gly Gly Gly Asp His Gly Gly					
ggg ggc ggc cac ggg cac gct ggc cac cac cat cac cac cac cac cac	65	70	75		303
Gly Gly His Gly His Ala Gly His His His His His His His His His					
cac cac ccg ccc atg atc gcg ctg cag ccg ctg gtc acc gac gac ccg	80	85	90		351
His His Pro Pro Met Ile Ala Leu Gln Pro Leu Val Thr Asp Asp Pro					
acc caa gtg cac cac cac caa gag gtg att ctg gtg cag acg cgc gag	95	100	105		399
Thr Gln Val His His Gln Glu Val Ile Leu Val Gln Thr Arg Glu					
gag gta gtg ggt ggc gac gac tcg gac ggg ctg cgc gcc gag gac ggg	110	115	120	125	447
Glu Val Val Gly Gly Asp Asp Ser Asp Gly Leu Arg Ala Glu Asp Gly					
ttc gag gac cag atc ctc att ccg gta ccc gcg ccg gcc ggc gga gac	130	135	140		495
Phe Glu Asp Gln Ile Leu Ile Pro Val Pro Ala Pro Ala Gly Gly Asp					
gac gac tac atc gag cag acg ctg gtc acc gtg gcg gcg gcc ggc aag	145	150	155		543
Asp Asp Tyr Ile Glu Gln Thr Leu Val Thr Val Ala Ala Ala Gly Lys					
agc ggt ggc ggg tct tcg tcg ggc ggc cgc gtc aag aag ggc ggc	160	165	170		591
Ser Gly Gly Ser Ser Gly Gly Arg Val Lys Lys Gly Gly					
ggc aag aag agc ggc aag aag agt tac ctg ggc agc ggg gcc ggc gcg	175	180	185		639
Gly Lys Lys Ser Gly Lys Ser Tyr Leu Gly Ser Gly Ala Gly Ala					
gcg ggc ggt ggc ggc gac ccg ggt aat aag aag tgg gaa cag aag	190	195	200	205	687
Ala Gly Gly Gly Ala Asp Pro Gly Asn Lys Lys Trp Glu Gln Lys					
cag gtg cag atc aag acc ctg gag ggc gag ttc tcg gtc acc atg tgg	210	215	220		735
Gln Val Gln Ile Lys Thr Leu Glu Gly Glu Phe Ser Val Thr Met Trp					
tct tca gat gaa aaa aaa gat att gac cat gaa aca gtg gtt gaa gag	225	230	235		783
Ser Ser Asp Glu Lys Lys Asp Ile Asp His Glu Thr Val Val Glu Glu					
cag atc att ggg gag aac tca cct cct gat tat tct gaa tat atg aca	240	245	250		831
Gln Ile Ile Gly Glu Asn Ser Pro Pro Asp Tyr Ser Glu Tyr Met Thr					
ggc aag aaa ctc cct gga ggg ata cct ggc att gac ctc tca gac	255	260	265		879
Gly Lys Lys Leu Pro Pro Gly Gly Ile Pro Gly Ile Asp Leu Ser Asp					
ccc aag caa ctg gca gaa ttt gcc aga atg aag cca aga aaa att aaa	270	275	280	285	927
Pro Lys Gln Leu Ala Glu Phe Ala Arg Met Lys Pro Arg Lys Ile Lys					

gaa gat gat gct cca aga aca ata gct tgc cct cat aaa ggc tgc aca Glu Asp Asp Ala Pro Arg Thr Ile Ala Cys Pro His Lys Gly Cys Thr 290 295 300	975
aag atg ttc agg gat aac tct gct atg aga aag cat ctg cac acc cac Lys Met Phe Arg Asp Asn Ser Ala Met Arg Lys His Leu His Thr His 305 310 315	1023
ggt ccc aga gtc cac gtc tgt gca gaa tgt ggc aaa gcg ttc gtt gag Gly Pro Arg Val His Val Cys Ala Glu Cys Gly Lys Ala Phe Val Glu 320 325 330	1071
agc tca aag cta aaa cga cac cag ctg gtt cat act gga gaa aag ccc Ser Ser Lys Leu Lys Arg His Gln Leu Val His Thr Gly Glu Lys Pro 335 340 345	1119
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tctcatttgc caagagggtt gatatctgg tttcccttga cag tgc aca ttc gaa Cys Thr Phe Glu 355	1770
ggc tgc ggg aag cgc ttt tca ctg gac ttc aat ttg cgc acg cat gtg Gly Cys Gly Lys Arg Phe Ser Leu Asp Phe Asn Leu Arg Thr His Val 360 365 370	1818
cga atc cat acc gga gac agg ccc tat gtg tgc ccc ttc gac ggt tgt Arg Ile His Thr Gly Asp Arg Pro Tyr Val Cys Pro Phe Asp Gly Cys 375 380 385	1866
aat aag aag ttt gct cag tca act aac ctg aaa tct cac atc tta aca Asn Lys Lys Phe Ala Gln Ser Thr Asn Leu Lys Ser His Ile Leu Thr 390 395 400	1914
cac gct aaa gcc aaa aac aac cag tgaaaagaag agagaagacc ttctcgaccc His Ala Lys Ala Lys Asn Asn Gln 405 410	1968
cgggaagcct cttcaggagt gtgattggga ataaatatgc ctctcccttg tatattttt	2028
ctaggaagaa ttttaaaaat gaatcctaca cacttaaggg acatgtttt ataaagtgt	2088
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35 40 45

Glu Asp Asp Glu Asp Gly Gly Gly Asp His Gly Gly Gly Gly Gly  
50 55 60

His Gly His Ala Gly His Pro  
65 70 75 80

Pro Met Ile Ala Leu Gln Pro Leu Val Thr Asp Asp Pro Thr Gln Val  
85 90 95

His His His Gln Glu Val Ile Leu Val Gln Thr Arg Glu Glu Val Val  
100 105 110

Gly Gly Asp Asp Ser Asp Gly Leu Arg Ala Glu Asp Gly Phe Glu Asp  
115 120 125

Gln Ile Leu Ile Pro Val Pro Ala Pro Ala Gly Gly Asp Asp Asp Tyr  
130 135 140

Ile Glu Gln Thr Leu Val Thr Val Ala Ala Ala Gly Lys Ser Gly Gly  
145 150 155 160

Gly Ser Ser Ser Gly Gly Gly Arg Val Lys Lys Gly Gly Gly Lys Lys  
165 170 175

Ser Gly Lys Lys Ser Tyr Leu Gly Ser Gly Ala Gly Ala Ala Gly Gly  
180 185 190

Gly Gly Ala Asp Pro Gly Asn Lys Lys Trp Glu Gln Lys Gln Val Gln  
195 200 205

Ile Lys Thr Leu Glu Gly Glu Phe Ser Val Thr Met Trp Ser Ser Asp  
210 215 220

Glu Lys Lys Asp Ile Asp His Glu Thr Val Val Glu Glu Gln Ile Ile  
225 230 235 240

Gly Glu Asn Ser Pro Pro Asp Tyr Ser Glu Tyr Met Thr Gly Lys Lys  
245 250 255

Leu Pro Pro Gly Gly Ile Pro Gly Ile Asp Leu Ser Asp Pro Lys Gln  
260 265 270

Leu Ala Glu Phe Ala Arg Met Lys Pro Arg Lys Ile Lys Glu Asp Asp  
275 280 285

Ala Pro Arg Thr Ile Ala Cys Pro His Lys Gly Cys Thr Lys Met Phe  
290 295 300

Arg Asp Asn Ser Ala Met Arg Lys His Leu His Thr His Gly Pro Arg  
305 310 315 320

Val His Val Cys Ala Glu Cys Gly Lys Ala Phe Val Glu Ser Ser Lys  
325 330 335

Leu Lys Arg His Gln Leu Val His Thr Gly Glu Lys Pro Phe Gln Cys  
340 345 350

Thr Phe Glu Gly Cys Gly Lys Arg Phe Ser Leu Asp Phe Asn Leu Arg  
355 360 365

Thr His Val Arg Ile His Thr Gly Asp Arg Pro Tyr Val Cys Pro Phe  
370 375 380

Asp Gly Cys Asn Lys Lys Phe Ala Gln Ser Thr Asn Leu Lys Ser His  
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Ile Leu Thr His Ala Lys Ala Lys Asn Asn Gln  
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<223> YY1 (SHR)

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Met Ala Ser Gly Asp Thr Leu Tyr Ile Ala Thr Asp Gly 111
1 5 10

tcg gag atg cca gcc gag atc gtg gaa ctg cat gag att gag gtg gag 159
Ser Glu Met Pro Ala Glu Ile Val Glu Leu His Glu Ile Glu Val Glu
15 20 25

acc atc ccg gtg gag act atc gag acc acg gtg gtg ggc gag gag gag 207
Thr Ile Pro Val Glu Thr Ile Glu Thr Val Val Gly Glu Glu Glu
30 35 40 45

gac gac gac gaa gac gac gag gat ggt ggc ggc gga gac cac ggt ggc 255
Asp Asp Asp Glu Asp Asp Glu Asp Gly Gly Gly Asp His Gly Gly
50 55 60

ggg ggc ggc cac ggg cac gct ggc cac cac cat cac cac cac cac 303
Gly Gly His Gly His Ala Gly His His His His His His His His
65 70 75

cac cac ccg ccc atg atc gcg ctg cag ccg ctg gtc acc gac gac ccg 351
His His Pro Pro Met Ile Ala Leu Gln Pro Leu Val Thr Asp Asp Pro
80 85 90

acc caa gtg cac cac cac caa gag gtg att ctg gtg cag acg cgc gag 399
Thr Gln Val His His His Gln Glu Val Ile Leu Val Gln Thr Arg Glu
95 100 105

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gac gac tac atc gag cag acg ctg gtc acc gtg gcg gcg gcc ggc aag Asp Asp Tyr Ile Glu Gln Thr Leu Val Thr Val Ala Ala Ala Gly Lys 145 150 155	543
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ggc aag aag agt ggc aag aag agt tac ctg ggc agc ggg gcc ggc ggc Gly Lys Lys Ser Gly Lys Ser Tyr Leu Gly Ser Gly Ala Gly Ala 175 180 185	639
gcg ggc ggt ggc ggc gac ccg ggt aat aag aag tgg gaa cag aag Ala Gly Gly Gly Ala Asp Pro Gly Asn Lys Lys Trp Glu Gln Lys 190 195 200 205	687
cag gtg cag atc aag acc ctg gag ggc gag ttc tcg gtc acc atg tgg Gln Val Gln Ile Lys Thr Leu Glu Gly Glu Phe Ser Val Thr Met Trp 210 215 220	735
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cag atc att ggg gag aac tca cct cct gat tat tct gaa tat atg aca Gln Ile Ile Gly Glu Asn Ser Pro Pro Asp Tyr Ser Glu Tyr Met Thr 240 245 250	831
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cga atc cat acc gga gac agg ccc tat gtg tgc ccc ttc gac ggt tgt Arg Ile His Thr Gly Asp Arg Pro Tyr Val Cys Pro Phe Asp Gly Cys 375 380 385	1866
aat aag aag ttt gct cag tca act aac ctg aaa tct cac atc tta aca Asn Lys Lys Phe Ala Gln Ser Thr Asn Leu Lys Ser His Ile Leu Thr 390 395 400	1914
cac gct aaa gcc aaa aac aac cag tgaaaaagaag agagaagacc ttctcgaccc His Ala Lys Ala Lys Asn Asn Gln 405 410	1968
cggaaagcct cttcaggagt gtgattggga ataaatatgc ctctcccttg tatattattt	2028
ctaggaagaa tttaaaaat gaatcctaca cacttaaggg acatgttttataaagttagt	2088
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<223> Zinc finger

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Val Glu Thr Ile Glu Thr Thr Val Val Gly Glu Glu Asp Asp Asp  
35 40 45

Glu Asp Asp Glu Asp Gly Gly Gly Asp His Gly Gly Gly Gly  
50 55 60

His Gly His Ala Gly His Pro  
65 70 75 80

Pro Met Ile Ala Leu Gln Pro Leu Val Thr Asp Asp Pro Thr Gln Val  
85 90 95

His His His Gln Glu Val Ile Leu Val Gln Thr Arg Glu Glu Val Val  
100 105 110

Gly Gly Asp Asp Ser Asp Gly Leu Arg Ala Glu Asp Gly Phe Glu Asp  
115 120 125

Gln Ile Leu Ile Pro Val Pro Ala Pro Ala Gly Gly Asp Asp Asp Tyr  
130 135 140

Ile Glu Gln Thr Leu Val Thr Val Ala Ala Ala Gly Lys Ser Gly Gly  
145 150 155 160

Gly Ser Ser Ser Gly Gly Arg Val Lys Lys Gly Gly Lys Lys  
165 170 175

Ser Gly Lys Lys Ser Tyr Leu Gly Ser Gly Ala Gly Ala Ala Gly Gly  
180 185 190

Gly Gly Ala Asp Pro Gly Asn Lys Lys Trp Glu Gln Lys Gln Val Gln  
195 200 205

Ile Lys Thr Leu Glu Gly Glu Phe Ser Val Thr Met Trp Ser Ser Asp  
210 215 220

Glu Lys Lys Asp Ile Asp His Glu Thr Val Val Glu Glu Gln Ile Ile  
225 230 235 240

Gly Glu Asn Ser Pro Pro Asp Tyr Ser Glu Tyr Met Thr Gly Lys Lys  
245 250 255

Leu Pro Pro Gly Gly Ile Pro Gly Ile Asp Leu Ser Asp Pro Lys Gln  
260 265 270

Leu Ala Glu Phe Ala Arg Met Lys Pro Arg Lys Ile Lys Glu Asp Asp  
275 280 285

Ala Pro Arg Thr Ile Ala Cys Pro His Lys Gly Cys Thr Lys Arg Phe  
290 295 300

Arg Asp Asn Ser Ala Met Lys Lys His Leu His Thr His Gly Pro Arg  
305 310 315 320

Val His Val Cys Ala Glu Cys Gly Lys Ala Phe Val Glu Ser Ser Lys  
325 330 335

Leu Lys Arg His Gln Leu Val His Thr Gly Glu Lys Pro Phe Gln Cys  
340 345 350

Thr Phe Glu Gly Cys Gly Lys Arg Phe Ser Leu Asp Phe Asn Leu Arg  
355 360 365

Thr His Val Arg Ile His Thr Gly Asp Arg Pro Tyr Val Cys Pro Phe  
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Asp Gly Cys Asn Lys Lys Phe Ala Gln Ser Thr Asn Leu Lys Ser His  
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Ile Leu Thr His Ala Lys Ala Lys Asn Asn Gln  
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Asp Thr Leu Tyr Ile Ala Thr Asp Gly Ser Glu Met Pro Ala Glu Ile  
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gcc ggc cac cac cat cac cac cac cac cac cac cac ccg ccc Ala Gly His Pro Pro 70 75 80	294
atg atc gcg ctg gag ccg ctg gtg acg gac gac ccg acc caa gtg cac Met Ile Ala Leu Glu Pro Leu Val Thr Asp Asp Pro Thr Gln Val His 85 90 95 100	342
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gcc tcg tcg ggc ggc ggt cgc gtg aag aag ggc ggc ggc aag aag aac Ala Ser Ser Gly Gly Arg Val Lys Lys Gly Gly Lys Lys Ser 165 170 175 180	582
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gat aac tct gct atg aga aag cat ctg cac acc cac ggt ccc aga gtc Asp Asn Ser Ala Met Arg Lys His Leu His Thr His Gly Pro Arg Val 310 315 320	1014
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cat gtg gga atc cat acc gga gac agg ccc tat gtg tgc ccc ttc gac His Val Gly Ile His Thr Gly Asp Arg Pro Tyr Val Cys Pro Phe Asp 375 380 385	1206
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Asp Asp Asp Glu Asp Gly Gly Gly Asp His Gly Gly Gly Gly Gly  
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Gly His Gly His Ala Gly His  
65 70 75 80

His His Pro Pro Met Ile Ala Leu Glu Pro Leu Val Thr Asp Asp Pro  
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Thr Gln Val His His Leu Gln Glu Val Ile Leu Val Gln Thr Arg Glu  
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Glu Val Val Gly Gly Asp Asp Ser Asp Gly Leu Arg Ala Glu Asp Gly  
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Phe Glu Asp Glu Ile Leu Ile Pro Val Pro Ala Pro Ala Gly Gly Asp  
130 135 140

Asp Asp Tyr Ile Glu Gln Thr Leu Val Thr Val Ala Ala Ala Gly Lys  
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Ser Gly Gly Ala Ser Ser Gly Gly Gly Arg Val Lys Lys Gly Gly  
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Gly Lys Lys Ser Gly Lys Ser Tyr Leu Gly Gly Ala Gly Ala  
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Ala Gly Gly Gly Ala Asp Pro Gly Asn Lys Lys Trp Glu Gln Lys  
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Gln Val Gln Ile Lys Thr Leu Glu Gly Glu Ser Ser Val Thr Met Trp  
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Ser Ser Asp Glu Lys Lys Asp Ile Asp His Glu Thr Val Val Glu Glu  
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Gly Lys Lys Leu Pro Pro Gly Gly Ile Pro Gly Ile Asp Leu Ser Asp  
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Pro Lys Gln Leu Ala Glu Phe Ala Arg Met Lys Pro Arg Lys Ile Lys  
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Glu Asp Asp Ala Pro Arg Thr Ile Ala Cys Pro His Lys Gly Cys Thr  
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Lys Met Phe Arg Asp Asn Ser Ala Met Arg Lys His Leu His Thr His  
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Gly Pro Arg Val His Val Cys Ala Glu Cys Gly Lys Ala Phe Val Glu  
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gggatacctg gcattgacct ctcagacccc aagcaactgg cagaatttgc cagaatgaag 840  
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acattcgaag gctgcggaa gcgccttca ctggacttca atttgcgcac gcatgtgcga 960  
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